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Title:

Inhibitors of the Anandamide Transporter

Sup E
1. A method of inhibiting transport of anandamide in an individual or animal comprising administering to the individual or animal a therapeutically effective amount of a compound represented by the following structural formula:



and physiologically acceptable salts thereof, wherein:

X is a hydrophobic aliphatic hydrocarbon chain containing from about 4 to about 30 carbon atoms and having one or more nonconjugated cis double bonds in the middle portion of the chain;

Y is selected from the group consisting of amide and ester radicals; and

Z is selected from the group consisting of hydrogen, lower alkyl, hydroxy substituted lower alkyl, aryl, hydroxy substituted aryl, heterocyclic and hydroxy substituted heterocyclic radicals;

wherein if X contains from 18 to 21 carbon atoms, Z cannot be hydrogen if Y is an amide radical.

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8. The method of claim 1 wherein Z includes an alkyl group alpha to the amido nitrogen.

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10. A method of modifying the rate of anandamide inactivation in an individual or animal comprising administering to the individual or animal a therapeutically effective amount of an inhibitor that targets an individual's or animal's anandamide transporter, said transporter being a protein exhibiting a temperature-dependent, saturable, high affinity and Na⁺-independent mechanism,

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wherein the inhibitor excludes a compound represented by the following structural formula:



and physiologically acceptable salts thereof, wherein:

X is a hydrophobic aliphatic hydrocarbon chain containing from 18 to 21 carbon atoms and having one or more nonconjugated cis double bonds in the middle portion of the chain;

Y is an amide radical; and

Z is hydrogen.

12. A pharmacological formulation comprising a compound represented by the following structural formula:



and physiologically acceptable salts thereof, wherein:

X is a hydrophobic aliphatic hydrocarbon chain containing from about 4 to about 30 carbon atoms and having one or more nonconjugated cis double bonds in the middle portion of the chain;

Y is selected from the group consisting of amide and ester radicals; and

Z is selected from the group consisting of hydrogen, lower alkyl, hydroxy substituted lower alkyl, aryl, hydroxy substituted aryl, heterocyclic and hydroxy substituted heterocyclic radicals;

wherein if X contains from 18 to 21 carbon atoms, Z cannot be hydrogen if Y is an amide radical.

19. The formulation of claim 12 wherein Z includes an alkyl group alpha to the amido nitrogen.